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# Adibasi

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# Role of Co-operatives for Providing Better Services to Tribal People of Eastern and North-Eastern Zone.

Dr. N. Patnaik

Out of about 52 million tribal population in the country more than 20 million, that is, about 40 percent live in the Eastern and North-Eastern States and Union Territories. They comprise Mizoram (Union Territory), Nagaland, Meghalaya, Arunachal Pradesh (Union Territory), Tripura, Manipur and Sikkim in the North-west and Assam, W. Bengal, Orissa and Bihar in the East. The first four areas comprising two States and two Union Territories have predominant tribal population varying in concentration from 70 percent to 95 percent whereas in the remaining seven States the tribal population varies from 6 per-cent to 29 percent.

Because of tribal preponderance the plans of Arunachal Pradesh, Meghalaya, Mizoram and Nagaland in their entirity are plans of Tribal Development whereas the States like Manipur, Tripura and Sikkim, Assam, West Bengal, Bihar and Orissa, having each certain areas of more than 50% tribal concentration, constitute the comity of Tribal Sub-Plan States.

The highest level of literacy which stands at 60% is found in Mizoram. In general the States in the hill areas such as Nagaland, Meghalaya, Manipur and Sikkim show a fairly high literacy rate ranging from 32% to 40% whereas Arunachal Pradesh and Tripura of the same hill areas and Assam, West Bengal, Orissa and Bihar of the plains areas show a low literacy rate varying between 13% and 23%.

The distribution of Sch. Tribes in "Workers" and "Non-workers" categories shows that in Arunachal Pradesh, Meghalaya, Manipur, Nagaland, Sikkim, Orissa and West Bengal both the categories comprise each round about 50%. But in Bihar, Mizoram and Tripura the proportion of non-workers is greater by around 10% then that of the workers. Among the working population the cultivators are in overwhelming majority in all States and Union Territories except in West Bengal where the proportion of the agricultural labourers is greater than that of the cultivators. On the whole the tribals of the eastern and north-eastern zone are largely agriculturists, having little stake on industrial work and the Union Territories like Arunachal Pradesh and Mizoram and the States like Manipur, Meghalaya, Nagaland and Sikkim show no population under agricultural labour.

The largest and most picturesque ethnic and cultural variety found anywhere in the world is in the eastern and north-eastern tribal zone of our country, which has been the home land of more than 200 different tribal groups speaking scores of different languages. These tribal communities possess some fine artistic habits and customs and their simple ways of living and the spirit of music and dance attract us greatly. One good thing which comes up on top of all other qualities is their strong tradition of co-operation, self-help and mutuality of obligation. Every tribal village is so to say in its own way a co-operative society. Each household thinks, lives and works as an integral part of the whole village. The precepts and principles advocated by formal co-operative organizations are in practice in day to day life among the tribals. In spite of this the formal types of induced co-operative programmes have not yet succeeded in most of them.

Article 46 of the Constitution of India lays down that "the State shall promote with special care the educational and economic interests of the weaker section of the people, and, in particular, of the Sch. Castes and the Sch. Tribes, and shall protect them from social injustice and all forms of exploitation". Except certain pockets where education has spread widely the tribals in the remaining vast areas have not got any benefit from the education sector. The level of literacy is deplorably low and a large mass of tribals are illiterate. As a result of this they have not been able to come to grips with the modern processes of change and development and take advantage of various opportunities now placed within the reach for their development.

Another disability which is perhaps more serious than the problem of illiteracy is the problem of their indebtedness. In the present time when the wants are on the increase, the old system of subsistence economy is not commensurate with the growing needs of the tribals. In such a situation the tribals are compelled to fall into debt for their daily requirements of life, such as, food, clothing and so on and in order to fulfil social obligations such as, marriage, festivals and death ceremonies and to meet emergencies of mishap and illness requiring offering of food and sacrifice of animals to the supernatural beings for relief. The money which the tribals need on these occasions is readily available at any hour of the day with the money-lenders who stay right in the tribal villages.

The money-lenders are paid back the loan with high interest thereon in kind. The prices fixed by the merchants and the local traders for the daily requirements which they sell to the tribals are always higher and the money advanced as loan by the money lenders carries with it an exorbitant rate of interest. Under such circumstances the tribals are bound to pay very heavily in kind. Exploitation takes place through other evil practices, such as fraud in weights and measures, and payment at low prices for farm and forest produce which the tribes sell to local traders and middlemen.

In such a situation the amount of loan swells up and the produce from the farm, forest and fruit trees offered by the tribal borrowers becomes insufficient for the high prices of things and the heavy amount of loan extorted by the merchants and money lenders. With the decline of their credit worthiness on account of the increasing burden of debt they have to offer their lands for sale to these merchants and money lenders. The tribals have to take further loans in cash to meet their needs and unforeseen expenditure on account of illness, death, etc. In many cases there are also long standing ancestral debts to be paid. Having lost all their resources they have now nothing but to offer themselves as agricultural labourers in the farms of the merchants and money lenders. Once a tribal is in the vicious circle of economic exploitation, it is an impossibility for him to get out of this debt bondage. The amount of his debt goes on mounting year after year making him serve the merchants in perpetuity. It is a fact that in most cases the tribals are born in debt, live in debt and die in debt.

The new strategy for tribal development which came into operation on the eve of the Fifth Five Year Plan in areas under Tribal Sub-Plan located in seven eastern and north-eastern States and in 10 other States of our country is aimed in the main at (1) strengthening of the Socio-economic base of the tribals through the implementation of income generating schemes and (2) termination of exploitation. Further, the regulation under Fifth Schedule and other legal enactments have been framed and enforced in tribal areas to relieve the tribals from the clutches of the rapacious brokers, money lenders and sycophants.

It has been the experience that legislation alone is no guarantee to stop exploitation, unless it is backed up with strong and sustained measures and in this context credit and marketing stabilized through Co-operative Societies have a high priority both as protective as well as developmental measures. Various study teams and working groups have been appointed by the Government of India to examine the working of the co-operative organization in tribal areas and have recommended suitable measures for accelerating progress of development. The important Review Committees which were set up from time to time between 1959 and 1971 are the Social Welfare Team of the Committee on plan projects, 1959; the Sch. Areas and Sch. Tribes Commission (otherwise known as Dhebar Commission), 1961; the special working group on co-operation for Backward Classes (Bhargava Committee), 1961, the Study Team on Tribal Development Programmes (Shilu Ao Committee), 1961 and the last Study Team known as (Bawa Committee), 1971. Out of the recommendations of these committees particularly that of the Bawa Committee emerged a kind of co-operative structure popularly known as LAMPS (Large Sized Multipurpose Co-operative Societies) which was adopted for all tribal areas under the Tribal Sub-Plan programmes with triple objectives such as (1) provision of credit for both production and consumption needs, (2) purchase from tribals of their surplus farm and minor forest produce, and (3) sale to tribals of their consumer necessities.

In 1978, a Study Team was set up under the chairmanship of Shri P. R. Dubhashi to suggest approach for marketing, credit and co-operation in tribal areas. According to the recommendations of the Committee the State Governments integrated credit-cum-marketing co-operatives at the primary level in the form of LAMPS as suggested by the Bawa Committee.

By the middle of 1981, 2558 LAMPS had been organized in various States and of these there were as many as 1032 LAMPS/PACS in nine States of Assam (23), Bihar (474), Manipur (52), Meghalaya (108), Nagaland (26), Orissa (222), Sikkim (4), Tripura (53), West Bengal (51), and two Union Territories of Arunachal Pradesh (15) and Mizoram (4). In many tribal areas, even in the remotest pockets like the 3000 ft Sunabeda plateau of Kalahandi district where a little known primitive tribe called the Bhunjia lives, the LAMPS has been of great benefit to the tribal people.

In the meantime various refinements in the structure and organization of the LAMPS have been made from time to time in order to fulfil effectively its three-fold functions. Some of such working details include greater representation of tribals in the membership of board of directors for creating a body of tribal leadership capable of managing its own affairs, linking up of weekly markets with the LAMPS as it's focal point of activities, coverage of population under LAMPS limited to 10,000 to 20,000, procurement from the tribals not only farm and forest produce but also other items available in consequence of emerging economic diversifications, stocking of items relative to tribal needs and not making the LAMPS a departmental store, enabling LAMPS to avail of optimum credit financing either from district co-operative banks and commercial banks, opening up of credit channels relative to medium-term and long-term financing by taking LAMPS as agents of Land Development Banks as suggested by CRAFICARD, satisfactory flow of differential rate of interest finance to weaker sections, streamlining of district credit committee and proper assessment of quantum of production and consumption credit, exploration of sources of finance for consumption credit from NABARD or Tribal Sub-Plan funds.

Some other refinements suggested are the devising of suitable measures for full recovery of credit, posting in LAMPS of qualified personnel capable of introducing modern technology for modernization of agriculture, feasibility of an administrative structure in the form of a separate sub-cadre of the co-operative cadre to manage the LAMPS, extent of utilization of finance provided by NCDC for storage godowns, transport vehicles, processing units, working capital for LAMPS, role of NAFED in the marketing of tribal produce procured by TDCC and LAMPS, arrangements for taking up concurrent and periodic evaluation studies throwing light on extent of recovery and overdue position, balance between inflow and outflow of funds, expenditure pattern including overhead expenses, manner and frequency of supervision and lastly the role of Tribal Research Institutes in carrying out such evaluation studies.

It is needless to emphasize and reiterate how important a role the co-operation, credit and marketing can play both as protective as well as developmental measures in the field of tribal welfare. Barring a few areas of large concentration the tribal communities living in the eastern States are largely in dispersed form and among them live those who exploit them. The plains in which the eastern States are located are more open and present less difficulty of access for inter place visitation as compared with the conditions prevailing in the hill areas of North-Eastern zone. Besides the relatively greater isolation, the States and Union territories show numerical preponderance of tribal population with very little non-tribal outsiders. Both these factors have helped people in preserving their co-operative tradition and all other interlinked mosaic of culture. In such a situation there may be very little need for taking any anti-exploitative steps as is required badly in the tribal areas located in Bihar, Orissa and West Bengal. Moreover, the level of literacy among the tribals of north-eastern hill areas is very high and it is an essential acquisition enabling them to come to grip with changing situations with some degree of confidence and to grasp the fruits of socio-economic measures of development. The establishment and functioning of co-operatives in tribal areas has to be reviewed in the context of ethnic composition, ecological setting, cultural pattern and wide infrastructural development of different regions and also in the country's overall context of development.

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# Nature of Exploitation in the Tribal Situation -An Overview.

P. K. Bhowmick

**Introduction :**

Use of the term exploitation, "........in a larger sense, may be traced to the idea found in all periods of the history of Western Social thought to the effect that some individuals, groups or classes benefit unjustly and unfairly from the labour of, or at the expense of, others". ( Encyclopedia of Social Sciences (1959) Vol. VI : 16-17). Marx linked it up with the idea of surplus value and he ultimately elaborated the entire economic system through the exploitative process under Capitalism. However, we are concerned here with the tribals in Indian situation. The tribals are considered to be autochthonous people having distinctive economic and social life and due to various factors they preferred isolation, which practically kept them in a comparatively less interacted situation. Their societies have simple technology and they have different social fabrics. They are distributed all over the country with different degrees of concentration. About 5 crores of tribal people are in our country now, i.e., they are scheduled, and the total number of the groups seems to be 427. They have different types of economic pursuits—mostly these were related early to their ecology and environment. Due to various historical processes of stress and strain, movements or migrations from their sylvan setting, they have been exposed to many external situations and, as such, we find them victims of the ongoing processes when these are considered rationally. Undoubtedly, this increasing contact brought them to a certain level of exploitation at the hands of non-tribals when traditional economic system eroded and the people began to face more intriguing situations. Attempt has been made here to assess some of these spheres of exploitative mechanism prevailing in our country in relation to the tribals, in general, and some remedial suggestions for overcoming them. It is true that after independence many more provisions have been made for these so-called downtrodden communities or for these weaker sections as our country is a Welfare State.

Possibly, exploitation of these simple group was started long ago—which dates back to prehistoric type of civilization, i.e., when agriculture appeared in human society. Perhaps, these Neolithic agriculturists who, by chance, got the advantages of good land, better irrigational facilities, more manpower and some other locational facilities, produced more in comparison to others who suffered loss of active-working members and cattle through epidemic, flood and other natural calamities.

Thus, a section of them became slaves, or had to live on the mercy of others in the existing socio-economic system. The concept of primitive communism which prevailed early became disrupted. As a matter of fact, we find through affluence, marginal proficiency and religious control, power began to generate and this extended the spheres of exploitation in human society in different forms from time to time. Greed, temptation and many other exploitative ideas crystallised in the mind of some people and slowly began to be institutionalized.

**Problems Surfaced :**

It is a matter of common knowledge that the ancestors of the present day tribal group faced many situations and these, in course of time, opened up various ways of exploitation. These groups of people due to their traditional style of life i. e., timidity, coyness, less experience with world affairs, enchained themselves and made them immobile which accentuated exploitation. It is true that this sort of exploitation, in most of the cases, is being done by the non-tribals who are termed at different times by the names meaning 'outsiders' or 'alien-groups'. Some sort of exploitation or deprivations were continued from historical times and slowly these were accepted by the groups.

Exploitation and its various operational aspects were surfaced more in India during the British rule, about which we get sufficient evidence.

It is true that the British Administrators in our country tried to keep the tribal people in isolation. The tribals, without any help from the Administration, being exploited, had to surrender to the pressure of Administration in most cases. The Administration helped their henchmen with a view to support the tyrants for supporting the Administration. Lands cleared by the tribals and cultivated by them had to go to the possession of some land-grabbing Zemindars who dislodged the simple tribal people on the plea of collection of 'rent' or other 'taxes'. Landlords, money-lenders, contractors began to exploit the tribals at different places and still these are continuing. Conservation and preservation of forests and other laws concerning the forest, created tension. Forest was used by the people since hoary past, but the laws were enacted, without any consideration of their relationship and traditional rights. Thus, land alienation or encroachment, non-entry into the forest or illegality to utilise forest produces, rather robbed off the forest which benefit the tribal people. They had no right to appeal to the Administration, nor the power. Bonded labour in various forms still continues. One Ph. D. dissertation from the A. N. Sinha Institute by Dr. Gaya Pandey under the guidance of Prof. Sachidananda has clearly corroborated the existence of Bonded Labour in tribal Bihar though this system is banned by the Law.

The tribal communities, in general, as has been said previously, are exposed to market economy though barter and exchange are still in vogue in some areas. As most of them are not aware of the full value of the cash/coin, they sometimes face difficulty and thereby are cheated by other groups of people. Due to various factors, traditional economic activities of the tribals are in a process of transformation and cash money has entered into their day to day economic life. Due to introduction of cash money and regular visits to the markets, and through contracts with the so-called *Bhadraloks*, their demands and necessaries have been changed and replaced. Among many tribes, population has increased by geometrical progression whereas land has increased by arithmetical progression through clearance of forest etc. Thus, the surplus man-power lay idle. This ultimately compelled them to have alternatives, to beg, borrow or steal or to procure loans of different nature. A field survey in some parts of Midnapore district, West Bengal in respect of indebtedness, reveals that more then 90% of the villagers are heavily indebted to either some individuals or to professional money lenders. These are :

1. Kabuliwallas.
2. Madrasee or Khakha Mahajans or money-lenders.
3. Gujrati money-lenders.
4. Kapria or cloth Mahajans who provide cloth before the Puja or winter season and they generally constitute Muslims from outside Bengal.

Their rate of interest varied from source to source. The local agricultural money - lenders used to give 6 paise per mensem per rupee, i.e., per Rs. 100/- the interest is upto Rs. 72/- per annum and, in such cases, something must be pawned as security. Even the local affluent agricultural castes used to allow paddy as 'Dadan' on advance on 50% interest, i.e., per 100 KG of paddy given during the agricultural operation period used to be paid 150 KG of fresh paddy just after the harvest and it must be paid back before the 1st of Magh ( Bengali year ) : 15th of January. These paddy loans were not only extended to the 'Bargadars', i.e., the 'Share-croppers', but also to other villagers. These were generally repaid by them because the loanee knew that in crisis, he would be again allowed to have loan from the Mahajan.

Professional money-lenders, as mentioned earlier, belong to outside the region and generally came at the agricultural time and continued to stay till after the Pujas. Before November, they went back and came correctly on the 1st of Magh, i. e., 15th of January to get back their advance. These professional money lenders did not want any security but simply wrote their names in a record book of their own.

The amount of loan in rupee varied from Rs. 10/- to the maximum of Rs. 50/- per family. The nature of advance of loan varied in cases of Kabuliwallas, Madrasee or *Khakha* ( i. e. shouting ) money lenders. But in case of Gujrati Mahajans, they advanced money at the rate of 75% interest, while 25% of the money was given in kind, i. e., by push sale of spices which were brought from their native land. The *Kapria* or cloth Mahajans supply cloth, specially Saree, Dhoti before the Puja holidays or at the time of *Diwali* and sometimes they supply *Chaddar* i. e. cotton wrapper etc. The market price was a bit exorbitant then. But the poor people had no cash money with them to procure a cloth or a wrapper and had also no other alternative than to have some for their families. But the amount for all these did not generally exceed Rs. 50/- in general with rare exceptions. These cloth merchants belonged to Muslim communities from Orissa. The mode of repayment and the rate of interest in all the cases were the same. For example, for a loan of Rs. 10/-, the loanee had to pay back Re. 1/- as capital per week and 25 paisa as interest. In this way, he had to return Rs. 12.50 P. in two and half months. Thus, the rate of interest went up to Rs. 120- per hundred in one year.

The system of getting loan from private sector is in vogue in the tribal concentrated areas of Midnapore, West Bengal though Banks and Co-operatives have begun to function now a days yielding very little remedy.

### Way To Amelioration :

After independence, there are many provisions in the Constitution itself for the welfare of these weaker sections and ways by which exploitation can be minimized. But in practice, the result is not upto satisfaction. There are various plans and many more institutional help which are extended to the people. Community Development Projects, special programmes for Tribal areas, Special Multipurpose Tribal Blocks were established, Tribal Sub-plans, LAMPS, ITDP etc., etc. and many schemes and projects have been undertaken by the Government to dispel economic instability. S. C. S. T. Development Corporation and some other agencies have been initiated by which the poorer tribals can stand on their own feet and, as a result, exploitation will be restricted. In this context, it is to be noted that Tribal sub-plan during the Sixth Plan period has a thrust on this aspect :

> "......perhaps, the most important, assiduous exertions are necessary to eliminate exploitation of Tribals in the fields of alienation of land, money lending, debt-bondage, trade, excise, forest etc." (Singh : 1983 )

With these ideas in view Government of India along with State Goverments either through their own administrative machinery or sometimes with the help of voluntary organaisations, began to initiate many developmental works at different parts of the country. As a result, we find establishment of schools and hostels for the tribal students, enterprises through the industries, housing and colony schemes for some people, agricultural loan and subsidy in many ways. There are many more schemes which directly accrue benefit to the tribals on the basis of which they can overcome the exploitative tendencies of the outsiders.

**Contrasting Combinations :**

Now, it is true that Government, specially Central Govt. is spending money for the weaker sections through the State machinery. It is interesting to note how exploitation is being done by some people either attached to the Government or to the Ruling Political Party. By way of Illustration, it may be said that the stipends by the Government for the tribal students are being released not earlier than, say, six to nine months. The school or the hostel authorities either ask the guardians of the students to pay their dues or to take back their students till the grant is made available by the Govt. Sometimes, some hush-money for the sake of 'speed' or 'incentive' has to be paid to low-grade officials for getting favour without which they, being displeased, harass the recipients. In the name of welfare, many things are purchased for the tribals who really do not require them. These are ultimately disposed of by the tribals to the outsiders at throw away prices. These are a few examples on the basis of which tribals are being deceived and the expenditure is debitted in the name of tribal welfare. Naturally, a fresh probe into the situation is indicated to create a new mentality if anybody wants to free the tribals from all forms of exploitation.

**A Suggestion :**

To overcome all these means of exploitations from the tribal life, we require a new mentality not only from the tribals but also from the non-tribals. The new generations should be given proper education by which they can change many of such mal-practices. Through orientation and training, not only the tribals but also other fellow non-tribal people of the locality should be given information about Governmental facilities, rules and regulations regarding benefits. They should change their mind to fight against such established exploitative systems so long continued. In other words, Human Resource Development should be given proper attention because development means 'Emerging quality of life' on the basis of which morality, rationality etc. should be operative against greed which leads to exploitation.

# A study of Bettman's figure among the Kutia Khond of Orissa

Dr. Gitanjali Nayak, M.Sc.

The study of the dermatoglyphic features of the human palm has been done by various authors from time to time. Some of the prominent workers such as Wilder (1902), Rife (1941) etc. have studied the dermatoglyphic patterns on the palm such as loops, whorls, vestiges, open fields. The two prominent regions on the palm which are mostly studied are the thenar and hypothenar region. Besides the usual loop, whorl and vestigial pattern the thenar region of the palm is sometimes found to present two loops which lie opposite to each other and are open on the different sides. This pattern on the thenar area was studied and termed as Bettman's figure (1931). In the present paper an analysis of the frequency of Bettman's figure in the Kutia Khond of Orissa is made.

Kutia Khond are one of the major divisions of the Khond tribe who inhabit the most inaccessible areas in the southern part of Phulbani and Kalahandi districts of Orissa.

The data were collected from 100 Kutia Khond males and 100 Kutia Khond females inhabiting different villages under Tumudibandh block of Phulbani district. Palm prints were collected using the ink-rolling method of Cummins and Midlo (1943).

## RESULT :-

Out of the 100 male and 100 female Kutia Khond studied only 7 males (7.00%) and 8 females (8.00%) exhibit Bettman's figure on the thenar region unilaterally or bilaterally. The sex-wise difference with regard to the occurrence of Bettman's figure is statistically insignificant as shown in Table-I.

**TABLE-I**

Sex-wise distribution of Bettman's figure among the Kutia Khond.

| Group | Sex | No. observed | No. Present | | No. absent | | |
|---|---|---|---|---|---|---|---|
| | | | N | % | N | % | $X^2$ |
| Kutia Khond | M | 100 | 7 | 7.00 | 93 | 93.00 | $x^2 = 1$<br>d.f = 1<br>$0.50 > P > 0.30$ |
| | F | 100 | 8 | 8.00 | 92 | 92.00 | |

Bimanual difference in sexes with regard to the occurrence of Bettman's figure is shown in Table- II.

**TABLE-II**

Bimanual difference in the occurrence of Bettman's figure among the Kutia Khond.

| Group | Sex | No. observed | Right | | Left | |
|---|---|---|---|---|---|---|
| | | | N | % | N | % |
| Kutia Khond | M | 100 | 2 | 2.00 | 6 | 6.00 |
| | F | 100 | 6 | 6.00 | 6 | 6.00 |
| | TOTAL | 200 | 8 | 4.00 | 12 | 6.00 |

It is observed that among the males this figure occurs in a higher frequency in the left palm whereas the frequency of this figure among the females is equal on both the palms. The frequency of this figure in both the sexes are nearly equal.

Asymmetric and symmetric occurrence of this figure is 6.00% and 1.00% respectively, among the males whereas among the females the frequency of asymmetric and symmetric occurrence of the figure is equal (4.00%). The figures are presented in Table- III

**TABLE-III**

Symmetry and asymmetry in Bettman's figure among the Kutia Khond.

| Group | Sex | No. observed | Asymmetry or Unilateral | Symmetry or Bilateral |
|---|---|---|---|---|
| Kutia Khond | M | 100 | 6 | 1 |
| | F | 100 | 4 | 4 |

A comparison of the occurrence of the Bettman's figure is made between the Kutia Khond and the Vadabalijas, a fishing group living on the Visakhapatnam coast of Andhra Pradesh, which is presented in Table-IV.

**TABLE-IV**

Frequency of Bettman's figure among the Vadabalijas and Kutia Khond.

| Group | Sex | No. observed | Present | | Absent | | Author |
|---|---|---|---|---|---|---|---|
| | | | N | % | N | % | |
| Vadabalija (ANDHRA) | M | 130 | 33 | 25.39 | 97 | 74.61 | M. Sudhakar Babu-1981 |
| | F | 112 | 23 | 20.53 | 89 | 79.47 | -do- |
| Kutia Khond (ORISSA) | M | 100 | 7 | 7.00 | 93 | 93.00 | present study |
| | F | 100 | 8 | 8.00 | 92 | 92.00 | -do- |

$x^2 = 1173.744$ d. f. = 1 $P < .01$

It is seen from the table that the Kutia Khond exhibit very low frequency of Bettman's figure in comparison to the Vadabalijas. Both the groups do not exhibit statistical difference sexwise. But the two groups are statistically significant with regard to the occurrence of Bettman's figure in their population.

**References :-**

Cummins, H. and C. Midlo-1943—Finger prints Palm and Soles. Philadelphia. The Blackistan Co,

Babu, M. S. -1981—Incidence of Bettman's figure among Vadabalijas. Man in India Vol. 61, No. 1, March, 1981, PP 83-85.

# Caste Composition in a Kondh Area

U. N. Patnaik

This is an attempt to describe the different castes living in the tribal areas. The Kondh has already been described as belonging to a classless society. He has also no caste system. But in his land and alongwith him live differnt artisans and others, nacessary for the society. They are described below :

The blacksmith of the area 'Loharenju' is not a tribal but as the name indicates seems to have been originally an Oriya who came to the area from the adjoining plain area either along with the Kondh or immediately in his wake. The Lohar is a caste which deals with 'Loha' or Iron. The Lohar seems to have been inducted into the hills and has been staying in the area either compelled by the Kondh or by his own choice. The Lohars have no concentration and practically there is one family in a major village or in a group of villages. They live side by side with the Kondh but there is no inter-marriage and inter-dining between the two peoples. The Lohar has his relatives spread all over the area specially in all the important villages. Although he has copied the Kondh customs to a great degree he retains his tradition and lives, so to say, all by himself. He takes cooked food from the Kondh but the Kondh dose not reciprocate although he is not treated as an outcaste by the latter. He is continuing to live as a vassal of the Kondh. He worships the Kondh Gods and joins all the religions and social functions of the Kondh. He dose not eat buffalo meat or beef but he joins the Kondh in drinking. His smithy is just like one of his counterparts of the plains. All the implements he has, seem to have been imported from the plains. It is not known as to whether he got his first supply of raw materials in the hills. Probably such materials were imported into the area by the pack bullock traders. The Lohar or the blacksmith manufactures all household articles required by the women folk and all agricultural and other implements, weapons, etc. required by the Kondh. The axe is prepared with embossings of brass done all by himself. He prepares the very popular axe which every Kondh household invariably possesses. The axe is a multipurpose article of the Kondh which is used in hunting, cutting logs etc. Sickle, plough iron and all other agricultural implements and arrow head are manufactured by the Lohar. The Lohar procures his charcoal himself by burning sal logs. He is usually assisted by his son or by a relative boy who works on the bellows.

There is no barber caste in the hills and the Kondhs shave each other whenever beards are sufficiently grown. The razors are also prepared by the Lohar. He somehow seems to have learnt the art of tempering the steel and the blades work well for a long time.

In this connection, I may mention that there is a village near Taptapani known as Lohagudi. Just about a quarter of a mile from the village there is a valley which is full of smolten iron or pig iron. The village seems to have got its name from this valley of pig iron. There is no evidence as to the furnace which was used by the people and there is no trace of the tribe which did this job long ago. The Lohar of the hill is also a good locksmith and his locks are burglar proof and are of different design and finish. The Lohar vary rarely owns land. If he has any, it is to a small extent which he can work by himself. He is paid by barter, cash and sometimes by annual payments in paddy. This caste as well as some of the other castes in the hills require detailed study.

Potter : The next caste which seems to have come into the high lands along with the Kondh or immediately after him, is the potter. As is natural he practically feeds Kondh population after the tribal started eating cooked food. He plies his trade with the customary wheel as in the adjacent plain area. In place of jute ropes by which the wheel is rotated he uses fibre ropes. The techniques of manufacturing pots etc. is the same as it is elsewhere, the firing is done as in the plains. Mud is prepared out of suitable soil selected by the potter and puddling is done by hands and feet.

Cooking pots and water pots of different sizes, liquor pots, earthen lamps, terracotta and effigies of animals are manufactured by the potter. The pots are carried to tribal villages where they are sold by barter or by cash payment. Nowadays a potter sells his wares at the weekly markets and with the money realised he purchases his weekly necessities from the market.

The pots as mentioned are seasoned with anacardium juice and the smoke and soot of the kitchen. This seasoning reduces the chances of easy breakage.

Sitar is the next caste living in the hills. The caste is not found in the plains. The caste is a scheduled caste and lives on bamboo basket weaving and by weaving winnowing fans. The winnow is a very useful article and besides winnowing grains it was necessary in the long past as a receptacle in which rice was given to the elephants of the sahibs. The Sitar weaves doli in which paddy and other grains are stocked by the tribals. The Sitar also weaves the bamboo door leaves which have later been substituted by the wooden planks. He also weaves bamboo receptacles required to carry cow dung from the cattle shed and small bamboo boxes in which the Kondh keeps his finery and jewellery. His services are also required for the funeral ceremony of the Kondh. He distributes oil to all the agnates of the deceased. Besides the bamboo works he does, he is the silversmith of the area. He manufactures the brass and silver waist chains, silver head dress, ear rings and hair pins used by the Kondh women. He manufactuers Dorbo (part of the dowry of the bride). This Dorbo consists of models of different animals and birds and by peculiar embossing the Sitar makes them very acttractive. Lotas with embossing upon them are also done by him.

The next caste is Ghasi. This caste has a small population and the people are spread out. They live in very small concentrations. They are not agriculturists but live on business. They live on collecting and selling hides and are drummers. They manufacture and repair the drums of tribals. The Ghasi is a non-believer of tribal deities but he and his drum are in necessity at major festivals of the Kondh. He lives like the tribals, partakes of buffalo meat and beef. The Ghasis, men and women dress like non-tribals and they follow non-tribal ceremonies. Although they join in major festivals and funeral ceremonies, the Ghasis have a definite function to play.

Certain other non - tribal Oriya castes live in the area. They are 1) the Tohola, 2) the Kulta, 3) the Sudha, 4) the Sundhi, 5) the Hill chiefs like Patros and Bisois. There are Hodadars and Paiks. There is another tribe namely the Gond who live in a small concentration. If no studies have been made on these non-tribal Oriya castes a detailed study seems to be necessary with particular reference to the nature of relationship which they have with the Kondhs.

# Assessment of Friendship as a Stimulating Agent for Schooling Among the Rural and Urban Tribal School-Students

S. Patel

Friendship is a social concept established by the meeting of mutual interest pertaining to one's survival and/or enrichment of existence, mutual respect and learning. The present study aims at studying the determinants of friendship, its variation with age, locality and as a parameter for evading educational stagnation and wastage among the tribal school-students in Orissa.

School is the first step away from the family into the outside world, where a student becomes a part of a 'peer-society'. With them he learns to develop new feelings of adequacy and acceptance. This interpersonal relation, is manifested in various forms in different levels of development (age), which gradually continues from most temporary to more stable form. In this group-relation, some individual likes someone than others. This kind of special selection coupled with long association and accompaniment leads to friendship.

About one in every four citizens in Orissa is a tribal and they form a major minority. Tribals, along with their distinct physical and diverse cultural traits, have some common characteristics like :- nature of rurality, speciality of illiteracy, economic backwardness and social deprivation.

PROBLEM : With this frame of reference, the present study aims at exploring the factors in respect of qualities that pave the way for friendship in two tribal groups of school going children.

HYPOTHESES : It is hypothesised that —

(i) There are some definite qualities or traits that help in the emergence of friendship in a group of tribal school-children.

(ii) These qualities are culturally oriented and are the indicators of acculturation as well as academic achievements through schooling.

(iii) The rural tribals are likely to remain absent for a longer period and stagnate more compared to the urban tribals.

Friendship is a psycho-social force that shapes the personality structure and determines its behavioural trend. Thus any desired change in the personality field can be achieved by bringing about the necessary changes in the psycho- social world. In other words, these basic psycho-dynamic aspects should be properly handled for treating the cognitive deficits of the subjects concerned.

The tribal children mainly come from low-potential families, more concerned with their daily needs than providing experiences that would have future educational pay-off. Most of them don't have a regular meal-time, whereas regular meal-time can be taken to represent "the most basic time ordering event by which one can begin to develop time-concepts and a future orientation" ( Miller, 1968 ).

**MATERIAL AND METHODS :-** Appropriate schedules were administered among 600 Kondh tribal school students ( 300 each from rural and urban areas belonging to class VI to X ) so as to evaluate the qualities of their friends in the respective classes of the scools concerned.

**Observations :**

TABLE—I

Frequency and Percentage of Ten qualities of Friendship

| Qualities of Friendship | Tribal school students | | | |
|---|---|---|---|---|
| | Rural | | Urban | |
| | Frequency | Percentage | Frequency | Percentage |
| 1. Aggresive behaviour | 51 | 17.00 | 31 | 10.33 |
| 2. Sporting spirit | 49 | 16.33 | 73 | 24.33 |
| 3. Helps in danger | 46 | 15.33 | 33 | 11.00 |
| 4. Co-oparative attitude | 33 | 11.00 | 26 | 8.66 |
| 5. Simplicity | 29 | 9.66 | 39 | 13.00 |
| 6. Good morals | 23 | 7.66 | 31 | 10 33 |
| 7. Good behaviour | 21 | 7.00 | 79 | 26.33 |
| 8. Calm in nature | 19 | 6.33 | 46 | 15.33 |
| 9. Good academic performance | 16 | 5.33 | 116 | 38.66 |
| 10. Handsome appearance | 13 | 4.33 | 26 | 3.66 |

## TABLE—II

Frequency and Percentage of the qualities in respect of two age-groups and localities.

| Qualities | Rural Tribals | | Urban Tribals | |
|---|---|---|---|---|
| | Group-I ( Age 10-13 ) | Group-II (Age 14-16) | Group-I | Group-II |
| 1. Aggresive behaviour | 18 (35.29) | 33 (64.71) | 18 (54.54) | 15 (45.46) |
| 2. Sporting spirit | 23 (46.93) | 26 (53.07) | 39 (53.41) | 34 (46.59) |
| 3. Helps in danger | 20 (55.55) | 26 (44.45) | 23 (53.49) | 20 (46.51) |
| 4. Co-operative attitude | 14 (42.42) | 19 (57.58) | 19 (73.07) | 7 (26.93) |
| 5. Simplicity | 19 (65.51) | 10 (34.49) | 29 (74.35) | 10 (25.65) |
| 6. Good morals | 13 (56.52) | 10 (43.68) | 18 (58.06) | 13 (41.94) |
| 7. Good behaviour | 11 (52.38) | 10 (47.62) | 49 (62.15) | 30 (37.85) |
| 8. Calm in nature | 10 (52.63) | 9 (47.37) | 26 (56.52) | 20 (43.48) |
| 9. Good academic performance | 12 (75.00) | 4 (25.00) | 86 (74.13) | 30 (25.87) |
| 10. Handsome appearance | 5 (38.46) | 8 (61.54) | 16 (28.41) | 10 (71.59) |

Analysing the above Tables, it is evident that the highest frequency of qualities among rural and urban students were "aggressive behaviour" and "good academic performance" respectively. But from Table - II it is conclusive that simplicity is a quality that is revealed in inter-personal communication of somewhat matured nature. It gradually becomes complex with the advance of age. Thus it is observed that the students of tender age and of urban locality have definite inclinations for good qualities.

**Summary and Conclusions :**

The tribals under study are traditional, superstitious and religious. Security rather than progress is their vocational goal. Coming from low SES (Socio-economic standard) they show a positive relationship with anxiety (Feldhusen and Klausmeir, 1962). Thus they become anxious and maintain pessimistic expectations for educational and occupational success and success in life in general. For them the anxeties are both physical and social (Davis, 1948).

Davis (1948) also believes that they enjoy two areas of experiences, which are acute sources of anxiety for the middle class, i.e., sexual relation and physical aggression.

Friendship acts as an effective behavioural requirement for proper schooling of the students. It provides motivational support by creating a reality-oriented emotional attachment to the school environment.

Thus the real breakthrough in checking stagnation and wastage among the tribals will come, if we concentrate upon the the interaction styles within the school environment than upon the causes of the disadvantaged conditions.

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# Comparative Demographic Analysis Between the Traditional and the Hinduised Saora.

N. C. Das
P. K. Patnaik

In the present paper an attempt has been made to find out the basic demographic differences between the traditional Saora ( Lanjia Saora ) and the Hinduised Saora ( Suddha Saora ). For the purpose of the study, two traditional Saora villages and one Hinduised Saora village in R. Udayagiri Block of Ganjam District were selected. Door to door census along with the interview technique was adopted for the collection of data during a period of 15 day stay from 15th to 31st December, 1982.

Before coming to the demographic analysis, a brief description of the villages and the tribe under study is necessary. Munising, the Hinduised Saora village is situated one kilometre North-West of Chheligada township. The State High way No. 16, Bhubaneswar—R.Udayagiri—Parlakhemundi, runs through the small township of Chheligada. Kulapathar, one of the traditional Saora villages is situated 3 kilometre North-West of Munisingh. Munigadihi, the other traditional Saora village is located 3 kilometre South-West of Munisingh. Munisingh is nearly 1800 feet above the sea level just as Chheligada. But the traditional Saora villages are above 2,000 feet amidst the dense forest. Locationally Munisingh, Kulapathar and Munigadihi form almost a triangle.

The Saoras are one of the aboriginal tribes of Orissa. They are mainly distributed in Ganjam District. Koraput, Sambalpur and Bolangir also show the distribution of the Saoras. Culturally speaking, the tribe at present has two broad divisions—the traditional and the accultured. The traditional ones are known as the Lanjia Saora. The accultured Saoras are again of two types—the Hinduised and the Christianised. For the purpose of the present paper we have discussed regarding the traditional (Lanjia) and the Hinduised (Suddha) Saora. It is only the Lanjia Saora who speak the traditional dialect which is included in Austro-Asiatic language of the Mundari Family. All the other groups speak local Oriya fluently. They have almost forgotten the traditional dialect. So far as the Saoras of Munisingh are concerned, very few speak the traditional dialect, particularly the aged people. They are so much Hinduised—the process might have taken few generations—that the outsiders even confuse whether they belong to a tribe. It is a fact that they were wrongly included under the Hindu caste in the 1971 census for which they were deprived of the facilities provided by the Government to tribal people for a few years. They ultimately had to take the help of the Court of law to avail of the facilities. Basically Suddha Saoras are plain dwellers closer to the other caste people and mainly live on agriculture. They also accept wage earning in lean seasons. Those who do not possess wet land, work as agricultural labourers in the near by villages. Few of them go for wood cutting to the jungle and sell them in the Chheligada market. On the contrary, the Lanjia Saoras live in the hill tracks amidst dense forest far away from the modern people. They are basically shifting cultivators and food gatherers. Very few of them accept wage earning.

The marriage and family pattern of the Suddha Saora is very much similar to that of the Hindu system. Out of 25 families 14 are joint families and the rest 11 are simple families, whereas in both the traditional Saora villages all the families are simple ones. Arranged marriage is common in case of Lanjia Saora. Sororate and Levirate are often practised. The system of polygamy which was found among the Lanjia Saora, is now not so common and there is none in these two villages. The age at marriage in case of Lanjia Saora is higher than that of the Suddha Saora. It is roughly 19 years in case of Lanjia females and 18 years in case of Suddha females.

Suddha Saoras are more aware of the family planning norms. Economically they are better off than their conterparts. Educational standard is also higher in case of Suddha Saora. The rate of literacy is nearly 24% among Suddhas, while the Lanjias show roughly 4% only (for details see Table-3). On the whole, the world view of Suddha Saora is wider because of the above reasons than that of the Lanjia Saora.

With the above existing socio-economic and educational conditions, how the Lanjia and the Suddha Saora differ demographically has been discussed in the paper.

At the outset, population distribution by age and sex has been analysed. The population distribution (see Table—1&2) gives an interesting picture. The child population in case of Suddha Saoras is comparatively more than that of the Lanjia Saora; 43.62% and 38.68% respectively. But in all other categories, the proportion of Lanjia Saora is more. In the fertile age group ( seeing the reproductive capacity of the Saora we have taken 15—44 as the fertile group ) the proportion of Lanjia Saora is 44.34% and that of the Suddha Saora is 42.28%. Again, in the economic active age-group the distribution is 56.66% among the Lanjias and 51.68% among the Suddha Saoras. So far as the aged distribution is concerned the proportion is almost the same in both the groups. The above picture shows that the Suddha Saora has a younger population compared to the Lanjia Saora. Because of this distribtion the dependency ratio is comparatively more among the Suddha Saora ( See Table—6 ).

As we compare the fertile age group, the Lanjia Saora exhibits higher proportion whereas the child-woman ratio is comparatively low in case of the Lanjias ( see Table—7 ). The analysis of Table—4 shows that the proportion of currently married females in 15—44 age group is 71.4% in case of Lanjia and 76.7% in case of Suddha Saora. Further, among the currently married females, 75% in case of Lanjias and 82% in case of Suddhas are in the fertile age group. In case of uumarried distribution, the proportion is comparatively more among the Lanjia Saora in the same age group. So, either way we see, the vulnerable females ( females responsible for the births ) are comparatively low in proportion among the Lanjia Saora. The age at marriage is comparatively high among the Lanjia Saora. It is nearly 21 years for males and 19 years for females.

But among the Suddha Saora it is nearly 20 years and 18 years respectively. The age at marrige among the Lanjias is high because of the following factors :

(a) Since bride price is still practised, the youngmen decide to marry after being capable to pay the required amount.

(b) Elderly girls are preferred as brides because they would perform household work efficiently and would help better in the shifting cultivation.

In general the socio-economic condition of the Lanjias is such that youngmen prefer elder brides. At times, the age of the bride is found to be equal or more than that of the groom. Widow marriage is prevalent among the Lanjia Saora which is occasionally found among the Suddha Saora.

The widow distibution in Table—4 shows interesting features. In the fertile age group the widows are more in proportion among the Lanjia Saora. But in the aged group ( 60 yrs. and above ) it is seen that the number of widowers is exceptionally more among the Lanjias whereas the numbers of widows among the Suddha Saora is comparatively very high. This interesting distribution speaks of the mortality differentials. The Lanjia females die more in number compared to the Suddha females whereas the Suddha males die more compared to Lanjia males. This is because of the fact that the Lanjia females and the Suddha males are more exposed to risk.

The birth and death rates (Table—6) particularly the birth rates show remarkable difference. The birth and death rates are calculated taking into account the previous year's live-births and deaths. It is seen that birth rates of the Suddhas and the Lanjias are 47 and 38 per thousand respectively. If we compare the finer measurements (Table—7),it is the Suddha Saora who show higher rates of fertility than the Lanjia Saora. So, it can safely be said that the Suddha females are more fertile although they are exposed to the modern family planning programmes. Three important factors are combinedly responsible for this :

(a) comparatively low age at marriage among the Suddha Saora,

(b) The Suddha Saora are better fed, particularly the expectant mothers get free food from the Mahila Samiti,

(c) the proportion of joint families among the Suddha Saora is very high (56%) which indirectly contributes to the higher fertility rates.

So far as the death rate is concerned, it is almost same in both the groups being 27 among the Suddhas and 28 among the Lanjias. But the infant mortality rate is higher in case of Lanjia Saora, because Suddha Saora are closer to the medical facilities. Taking the birth and death rates, the natural growth rate is calculated. It is seen that the growth rate of the Suddha Saora is 2% and that of the Lanjia is 1% only. Further the analysis of the finer measurements of fertility (Table—7) speaks of higher growth rate among Suddha Saora compared to the Lanjia Saora.

All the above analysis show that inspite of higher educational and econmic standards, more exposure to the modern family planning programmes and medical facilities the Suddha Saoras are still in the beginning of the demographic transition. It is rather seen that the Lanjia Saoras having little exposure exhibit lower fertility rates compared to their advanced counterparts. So we conclude by saying that the mere exposure of the modern facilities do not necessarily affect the demographic behaviour.

## TABLE—1

Percentage distribution of population by age and sex.

| Age group | *Suddha Saora* Male | *Suddha Saora* Female | *Suddha Saora* Total | *Lanjia Saora* Male | *Lanjia Saora* Female | *Lanjia Saora* Total |
|---|---|---|---|---|---|---|
| 0-4 | 8.05 | 9.40 | 17.45 | 7.55 | 6.60 | 14.15 |
| 5-9 | 6.71 | 7.38 | 14.09 | 7.55 | 5.66 | 13.21 |
| 10-14 | 5.37 | 6.71 | 12.08 | 6.60 | 4.70 | 11.32 |
| 15-19 | 6.04 | 5.37 | 11.41 | 5.66 | 4.72 | 10.38 |
| 20-24 | 4.03 | 5.37 | 9.40 | 5.66 | 3.77 | 9.43 |
| 25-29 | 4.03 | 4.70 | 8.72 | 4.72 | 2.83 | 7.55 |
| 30-34 | 4.03 | 2.68 | 6.71 | 0.94 | 2.83 | 3.77 |
| 35-39 | 2.68 | 1.34 | 4.03 | 3.77 | 2.83 | 6.60 |
| 40-44 | 1.34 | 0.67 | 2.01 | 3.77 | 2.83 | 6.60 |
| 45-49 | 1.34 | 1.34 | 2.68 | 3.77 | 1.89 | 5.66 |
| 50-54 | 1.34 | 2.68 | 4.03 | 2.83 | 0.94 | 3.77 |
| 55-59 | 1.34 | 1.34 | 2.68 | 1.89 | 0.94 | 2.83 |
| 60+ | 2.01 | 2.68 | 4.70 | 2.83 | 1.89 | 4.72 |
| Total | 48.22 | 51.68 | (100) | 57.55 | 42.45 | (100) |

## TABLE—2

Population distribution by broad age categories.

| Age group | *Suddha Saora* Population | *Suddha Saora* Percentage | *Lanjia Saora* Population | *Lanjia Saora* Percentage |
|---|---|---|---|---|
| 0-14 | 65 | 43.62 | 41 | 38.68 |
| 15-44 | 63 | 42.29 | 47 | 44.34 |
| 45-59 | 14 | 9.40 | 13 | 12.26 |
| (15-59) | (77) | (51.68) | (60) | (56.60) |
| 60+ | 7 | 4.70 | 5 | 4.72 |
| Total | 149 | (100) | 106 | (100) |

### TABLE—3

Distribution of literates among the Suddhas & Lanjias.

| | *Suddha Saora* | | | *Lanjia Saora* | | |
|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total |
| | 31 | 5 | 36 | 4 | — | 4 |
| % to total Population | 20.81 | 3.36 | 24.16 | 3.37 | — | 3.77 |
| % execluding 0-4 age group | 25.20 | 4.07 | 29.27 | 4.26 | — | 4.26 |

### TABLE—4

Distribution of Marital Status of the Suddha and Lanjia Saora in the Fertile Age Group and Above.

| **Suddha Saora** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Age group | *Unmarried* | | *Currently married* | | *Widowed* | | Total | |
| | Male | Female | Male | Female | Male | Female | Male | Female |
| 15-44 | 11 | 5(16.7) | 22 | 23 (76.7)<br>(82.0) | — | 2 (6.7) | 33 | 30 |
| 45+ | — | — | 6 | 5<br>(18.0) | 3 | 7 | 9 | 12 |
| Total | 11 | 5 | 28 | 28<br>(100%) | 3 | 9 | 42 | 42 |
| **Lanjia Saora** | | | | | | | | |
| 15-44 | 11 | 4 (19.1) | 13 | 15 (71.4)<br>(75.0) | 2 | 2 (9.5) | 26 | 21 |
| 45+ | — | — | 7 | 5 (<br>(25.0) | 5 | 1 | 12 | 6 |
| Total | 11 | 4 | 20 | 20<br>(100%) | 7 | 3 | 38 | 27 |

### TABLE—5

Distibution of births and deaths during Dec. ‘81-Dec.’ 82

| *Suddha Saora* | | | | | *Lanjia Saora* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Birth | | | Death | | Birth | | | Death | |
| M | F | | M | F | M | F | | M | F |
| 3 | 4 | (Infant) | 1 | 0 | 2 | 2 | (Infant) | 0 | 1 |
| - | - | (Adult) | 1 | 2 | - | - | (Adult) | 1 | 1 |

### TABLE—6

Distribution of demographic Measurements

| Measurements | Suddha Saora | Lanjia Saora |
|---|---|---|
| Sex Ratio ( S. R. ) M/F | 935 | 1356 |
| Dependency Ratio ( D. R. ) | 0.93 | 0.78 |
| Crude Birth Rate ( C.B.R. ) | 47 | 38 |
| Crude Death Rate ( C.D.R. ) | 27 | 28 |
| Natural Growth Rate ( N.G.R. ) | 2% | 1% |
| Infant Mortality Rate ( I.M.R. ) | 143 | 250 |

### TABLE—7

Distributicn of finer fertility Measurements

| Measurements | Suddha Saora | Lanjia Saora |
|---|---|---|
| General Fertility Rate (G. F. R.) | 233 | 174 |
| General Marital Fertility Rate (G.M.F.R.) | 304 | 235 |
| Total Fertility Rate (T. F. R.) | 6.8 | 5.5 |
| Gross Reproduction Rate (G.R.R.) | 3.5 | 2.8 |
| Child Woman Ratio (C.W.R.) a-$P^{0-4}/F^{15-44}$ | 867 | 714 |
| b-$P^{5-9}/F^{19-49}$ | 875 | 777 |

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# Finger Dermatoglyphics of Cancer Patients

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From the beginning of eighteenth century considerable attention has been paid to the epidermal ridge patterns of palm and finger for racial, genetical and criminological studies. Wide spread medical interest in epidermal ridges developed only in the last several decades when it became apparent that many patients have unusual ridge formations. Recently, the growing medical interest in association of dermatoglyphics and certain diseases has been accompanied by welcome attention.

Data on dermatoglyphics in relation to diseases are not very scanty. Although, a number of reports are available on the association of dermatoglyphics with diseases like—tuberculosis, diabetes etc., data pertaining to dermatoglyphics of cancer patients are scanty. In the present study, an attempt has been made to see the association, if any, in cancer patients with respect to finger dermatoglyphics.

## Material and Method

The sample for the present study comprises of 120 control individuals ( 48 males and 72 females ) and 104 cancer patients ( 35 males and 69 females). All these patients were proved cases of carcinoma, as they gave positive inferences of biopsy test and X-ray reports. The data of the patients for the present study were collected form the D. K. Hospital, Raipur ( M. P. ) and the control samples were collected from the general population of Raipur ( M.P. ). The detailed information of patients were collected from the files and registers of the hospital. The identification and classification of the finger prints have been done according to the method suggested by Cummins and Midlo (1961) and Holt (1968).

## Results and Discussion

Tables—1 and 2 show distribution of various subtypes of the three major patterns of individual digits of both the series of males and females. However, these differences are statistically significant only in two digits of male i. e. IV and V fingers of left hand ( $X^2=31.72$, $df=7$, $p<0.001$ and $X^2=19.01$, $df=7, 0.01\ p<0.001$ respectively ) and three digits of females i. e. IV finger of right hand ( $X^2 = 10.12$, df $= 4.0.05 > p > 0.02$ ) and I and III fingers of left hand ( $X^2 = 23.01$, df $= 6$, $p < 0.001$ and $X^2 = 37.79$, df $= 8$, $p < 0.001$ respectively).

Table—3 shows comparison of various pattern types in patients and controls of both the sexes. The pattern types in both the series show an increase of finger tip arches. Similar results were noted by Verbcv (1970) in patient series with chronic leukaemia. However, the two groups do not show statistically significant differences in both the sexes ( $X^2 = 2.98$, df $= 2$, $0{,}30 > p > 0.20$ in males and $X^2 = 1.76$, df $= 2$, $0.50 > p > 0.30$ in females ).

Table—4 shows different indices in both the series of both the sexes. Pattern intensity index is almost similar in two groups of both the sexes. The patients have shown high values of Dankmeijer's index and Furuhata's index in males and females respectively.

Table—5 shows the mean ridge count for each finger in patients and controls of both the sexes. The male controls have higher ridge count on all the digits of both the hands except II digit. The female controls have higher ridge count on all the digits of both the hands except V digit of both the hands and I digit of left hand.

Dermatoglyphics is known to be a diagnostic aid in various disease conditions. As the data pertaining to association of dermatoglyphics with cancer are too inadequate, it cannot be concluded with affirmation whether finger dermatoglyphics of cancer patients are significantly different from the normals. More detailed studies in different dermatoglyphic parameters are essential before arriving at a concrete conclusion.

### TABLE — 1

Distribution of various subtypes of the three major patterns of individual digits of both hands in both the groups of male.

| Side | Digit | Group | SA | TA | UL | RL | CPL | LP | TL | WSS | WDS | WCC | ACC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right | I | P | 2.86 | — | 45.71 | — | 2.86 | — | 22.86 | 17.14 | 5.71 | 2.86 | — |
| | | C | 2.08 | — | 47.92 | — | 4.17 | 8.33 | 12.50 | 16.67 | 4.17 | 4.17 | — |
| | II | P | 2.86 | 8.57 | 48.57 | 5.71 | 5.71 | — | — | 25.71 | — | 2.86 | — |
| | | C | 4.17 | 8.33 | 41.67 | 2.08 | 10.42 | 4.17 | 2.08 | 25.0 | 2.08 | — | — |
| | III | P | 5.71 | — | 74.28 | — | 2.86 | — | — | 14.28 | 2.86 | — | — |
| | | C | 2.08 | — | 68.75 | — | 2.08 | — | 2.08 | 18.75 | 4.17 | 2.08 | — |
| | IV | P | 2.86 | 2.86 | 42.86 | — | 11.43 | — | 5.71 | 31.43 | 2.86 | — | — |
| | | C | — | — | 27.08 | — | 16.67 | 2.08 | — | 41.67 | 2.08 | 8.33 | 2.08 |
| | V | P | 2.86 | — | 74.28 | — | 11.43 | — | — | 11.43 | 2.08 | — | — |
| | | C | — | — | 72.92 | — | 8.33 | — | 2.08 | 12.5 | — | 4.17 | — |
| Left | I | P | 2.86 | — | 42.86 | — | — | 8.57 | 22.86 | 17.14 | 2.86 | — | 2.86 |
| | | C | 2.08 | — | 58.33 | — | 2.08 | 10.42 | 10.42 | 8.33 | 2.08 | 6.25 | — |
| | II | P | 8.57 | 14.28 | 34.28 | 8.57 | 2.86 | — | — | 28.57 | 2.86 | — | — |
| | | C | 8.33 | 8.33 | 47.92 | 4.17 | 6.25 | — | 2.08 | 16.67 | 6.25 | — | — |
| | III | P | 2.86 | 5.71 | 60.0 | — | 2.86 | — | 2.86 | 17.14 | 2.86 | 5.71 | — |
| | | C | 6.25 | 2.08 | 58.33 | — | 10.42 | — | 2.08 | 14.58 | 4.17 | 2.08 | — |
| | IV | P | 5.71 | — | 31.43 | — | 17.14 | — | — | 34.28 | 2.86 | 8.57 | — |
| | | C | — | — | 35.42 | — | 25.0 | 6.25 | 2.08 | 4.17 | 27.08 | — | — |
| | V | P | — | — | 74.28 | — | 17.14 | — | — | 8.57 | — | — | — |
| | | C | — | — | 66.67 | — | 12.5 | 2.08 | 4.17 | 14.58 | — | — | — |

P = Patients
C = Controls

TABLE—2

Distribution of various sub-types of the three major patterns of individual digits of both hands in both the groups of female.

| Side | Digit | Group | SA | TA | UL | RL | CPL | LP | TL | WSS | WDS | WCC | ACC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right | I | P | 4.35 | — | 44.93 | — | — | 5.80 | 21.74 | 20.29 | 1.45 | 1.45 | — |
| | | C | 5.55 | — | 47.22 | — | — | 5.55 | 1.11 | 20.83 | 4.17 | 4.17 | 1.45 |
| | II | P | 10.14 | 4.35 | 39.13 | 1.45 | 2.90 | — | 11·59 | 20.29 | 4.35 | 4.35 | 1.45 |
| | | C | 5.55 | 12.5 | 38.89 | 1.39 | 5.55 | 4.17 | 8.33 | 16.67 | 4.17 | 2.78 | — |
| | III | P | — | — | 78.26 | 1.45 | 2.90 | 2.90 | 7.25 | 5.80 | 1.45 | — | — |
| | | C | — | 1.39 | 80.55 | — | 1.39 | 2.78 | 1.39 | 5.55 | 1.39 | 5.55 | — |
| | IV | P | — | — | 44.93 | — | 7.25 | — | — | 40.58 | 1.45 | 5.80 | — |
| | | C | — | — | 40.28 | — | 22.22 | — | — | 23.61 | 2.78 | 11.11 | — |
| | V | P | 2.90 | — | 78.26 | — | 10.14 | — | 2.90 | 4.35 | 1.45 | — | — |
| | | C | — | — | 79.17 | — | 11.11 | 1.39 | 1.39 | 5.55 | 1.39 | — | — |
| Left | I | P | 4.35 | 1.45 | 28.98 | — | — | 8.69 | 37.68 | 15.94 | — | 2.90 | — |
| | | C | 5.55 | — | 50.0 | — | — | 13.89 | 9.72 | 18.05 | — | 2.78 | — |
| | II | P | 11.59 | 5.80 | 31.88 | 5.80 | 2.90 | — | 14.49 | 17.39 | 4.35 | 2.90 | 2.90 |
| | | C | 5.55 | 4.17 | 37.50 | 11.11 | 8.33 | 4.17 | 6.94 | 18.05 | 2.78 | 1.39 | — |
| | III | P | 4.35 | 2.90 | 69.56 | — | 2.90 | — | 4.35 | 15.94 | — | — | — |
| | | C | 2.78 | 6.94 | 65.28 | — | 2.78 | 4.17 | 1.39 | 12.5 | 1.39 | 2.78 | — |
| | IV | P | 1.45 | — | 36.23 | — | 28.98 | — | 1.45 | 28.98 | — | 2 90 | — |
| | | C | 1.45 | 1.39 | 33.33 | 1.39 | 20.83 | 4.17 | — | 26.39 | — | 11.11 | — |
| | V | P | 2.90 | 1.45 | 71.04 | — | 8.69 | — | 2.90 | 11.59 | 1.45 | — | — |
| | | C | 2.90 | — | 80.55 | — | 9.72 | — | 1.39 | 2.78 | — | 2.78 | — |

P = Patients
C = Controls

TABLE — 3

Comparison of various pattern types in patients and controls

| Sex | Group | Arches | Pattern types<br>Loops | Whorls | Test of significance<br>$X^2$ | D.F. | P |
|---|---|---|---|---|---|---|---|
| M | P | 6.85 | 54.28 | 38.86 | 2.98 | 2 | $0.30 > p > 0.20$ |
|  | C | 4.37 | 53.12 | 42.50 |  |  |  |
| F | P | 5.80 | 53.18 | 41.01 | 1.76 | 2 | $0.50 > p > 0.30$ |
|  | C | 5.55 | 56.66 | 37.78 |  |  |  |

P = Patients
C = Controls

TABLE — 4

Different indices among patients and controls

| Sex | Group | Pattern Intensity Index | Dankmeijer's Index | Furuhata's Index |
|---|---|---|---|---|
| M | Patients | 13.20 | 17.63 | 71.59 |
|  | Controls | 13.81 | 10.28 | 80.01 |
| F | Patients | 13.52 | 14.14 | 77.11 |
|  | Controls | 13.22 | 14.69 | 66.68 |

TABLE—5

Statistical constants of digital ridge counts and TFRC of Patients and Controls.

|  |  |  | Right |  |  |  | Left |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|
| Sex | Digits | Group | Mean ± | S.E. | S.D. ± | S.E. | Mean ± | S.E. | S.D. ± | S.E. |
| Males | I | P | 16.88 | 0.76 | 4.51 | 0.54 | 17.15 | 1.02 | 6.02 | 0.72 |
|  |  | C | 17.79 | 0.74 | 5.11 | 0.52 | 17.25 | 0.79 | 5.49 | 0.56 |
|  | II | P | 12.62 | 0.97 | 5.77 | 0.69 | 13.52 | 1.00 | 5.94 | 0.71 |
|  |  | C | 12.55 | 0.62 | 4.32 | 0.44 | 13.12 | 0.61 | 4.24 | 0.43 |
|  | III | P | 13.00 | 0.84 | 4.96 | 0.59 | 13.79 | 0.93 | 5.51 | 0.66 |
|  |  | C | 13.15 | 0.72 | 4.99 | 0.51 | 14.23 | 0.58 | 4.03 | 0.41 |
|  | IV | P | 15.09 | 0.93 | 5.49 | 0.65 | 15.70 | 0.97 | 5.74 | 0.68 |
|  |  | C | 15.66 | 0.70 | 4.85 | 0.49 | 17.10 | 0.79 | 5.47 | 0.56 |
|  | V | P | 14.03 | 0.81 | 4.83 | 0.58 | 13.56 | 0.80 | 4.73 | 0.56 |
|  |  | C | 15.00 | 0.77 | 5.37 | 0.55 | 14.52 | 0.70 | 4.85 | 0.49 |

TABLE—5 ( Contd. )

| Sex | Digits | Group | Right Mean ± S.E. | | Right S.D. ± S.E. | | Left Mean ± S.E. | | Left S.D. ± S.E. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Mean | S.E. | S.D. | S.E. | Mean | S.E. | S.D. | S.E. |
| Femals | I | P | 16.06 | 0.57 | 4.75 | 0.40 | 15.74 | 0.60 | 4.98 | 0.42 |
| | | C | 17.04 | 0.57 | 4.83 | 0.40 | 15.42 | 0.53 | 4.50 | 0.37 |
| | II | P | 13.43 | 0.67 | 5.54 | 0.47 | 12.34 | 0.62 | 5.20 | 0.44 |
| | | C | 13.47 | 0.54 | 4.55 | 0.38 | 12.72 | 0.54 | 4.63 | 0.38 |
| | III | P | 12.48 | 0.65 | 5.42 | 0.46 | 13.20 | 0.50 | 4.19 | 0.36 |
| | | C | 13.01 | 0.52 | 4.45 | 0.37 | 13.88 | 0.57 | 4.88 | 0.41 |
| | IV | P | 14.91 | 0.63 | 5.21 | 0.44 | 16.10 | 0.68 | 5.66 | 0.48 |
| | | C | 16.40 | 0.52 | 4 40 | 0.37 | 16.38 | 0.62 | 5.30 | 0.44 |
| | V | P | 13.63 | 0.60 | 4.98 | 0.42 | 13.97 | 0.59 | 4.90 | 0.42 |
| | | C | 13.26 | 0.47 | 3.97 | 0.33 | 13.47 | 0.51 | 4.34 | 0.36 |

| TFRC | | Mean ± | S.E. | S.D. ± | S.E. |
|---|---|---|---|---|---|
| Male Patients | — | 136.06 | 8.70 | 51.50 | 6.15 |
| Male Controls | — | 144.04 | 5.70 | 39.50 | 4.03 |
| Female Patients | — | 133.68 | 5.25 | 43.62 | 3.71 |
| Female Controls | — | 137.43 | 4.53 | 38.41 | 3.20 |

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# Physionometric and Nutritional Survey of Kondhs of Phiringia Grampanchayat of Phulbani District.

Sipra Routray
Kabita Patnaik

The Kondhs are generally known as 'hill-men' and the name has its origin from the root word Ko/Ku which signifies the mountain. They are numerically the largest among all the 62 tribes of Orissa. They are mainly concentrated in Koraput, Phulbani and Kalahandi districts of Orissa. To distinguish the tribe from other tribes the following physical features catch our eyes :-

Complexion—varies from light brown to brown.

Hair—colour is dark brown and not very profuse in quantity.

The males have less mustaches.

They are dolichocephals.

Their eyebrows are medium and thick.

Their lips are medium and thick.

Their Nasal Index varies from platyrrhine to mesorrhine.

They are of medium stature.

This study was conducted in Phiringia Grampanchayat of Phulbani district having 43 villages and centres round the Kondh boys belonging to the age group of 16 to 20 who have had school education upto class V and above. As per Universal Bench Mark Survey of the Tribal and Harijan Research-cum-Training Institute, one hundred and five (105) such boys inhabit this area out of which 100 boys were measured for this purpose.

This article is concerned with the recruitment of the Kondh boys to the army on the basis of their physionometric measurements. Martin and Ashley Montagu's methodology was adopted while locating the landmarks and taking the measurements. Firsthand data were collected by taking measurements of (1) stature, (2) weight and (3) chest. The stature is regarded as the height of the subject from floor to vertex which is taken by using an anthropometer. The weight is measured by the help of a weighing machine. The chest is measured by using a tape. The lower border of the tape should be above the upper border of the nipple. The boy should not hold breath or strain his muscles. The difference between normal and expanded chest measurement should be 5cm. A boy is considered fit, if measurements of his height, weight and chest are 160cm., 48kg. and 77-82cm. respectively as ascertained from the Military Board at the Branch Recruiting Office, Cuttack. This physical study was also correlated with the nutritional status of the Kondh males which was conducted on the above mentioned area by applying the interview and observation method.

TABLE — I

Physical fitness of Kondh males according to Education and Age group (16—20)

| | Education | | | | | | Age | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | VI | VII | VIII | IX | X | 16 | 17 | 18 | 19 | 20 |
| Height | 2 | 2 | 2 | 11 | 14 | 21 | 19 | 16 | 11 | 4 | 2 |
| Height & Weight | 2 | 2 | 1 | 8 | 11 | 15 | 11 | 12 | 11 | 3 | 2 |
| Height, Weight & Chest | 1 | 1 | 0 | 2 | 1 | 2 | 0 | 1 | 4 | 1 | 1 |

## RESULT

The distribution of tribal boys according to different measurements such as (1) height (2) height and weight (3) height, weight and chest is represented in Table—I. This is also correlated with the educational standard and the age group of the boys. Taking the factor of height into consideration 21, 14, 11, 2, 2, and 2 boys belong to class X, IX, VIII, VII, VI, and V respectively. Taking both height and weight into consideration 15, 11, 8, 1, 2, and 2 boys belong to class X, IX, VIII, VII, VI and V respectively. Taking all the criteria, that is, height, weight and chest into consideration 2, 1, 2, 0, 1, and 1 boy (s) belong to class X, IX, VIII, VII, VI and V respectively.

Similarly, taking ‘height’ as a factor of measurement 19, 16, 11, 4 and 2 boys are aged 16, 17, 18, 19 and 20 years respectively. Taking ‘height and weight’ as factors 11, 12, 11, 3 and 2 boys are aged 16, 17, 18, 19 and 20 years respectively. Lastly, taking all the criteria, that is, ‘height, weight and chest’ into consideration 0, 1, 4, 1 and 1 boy(s) are of the age of 16, 17, 18, 19 and 20 years respectively.

It is seen from the above Table that ‘class-X’ and ‘age16’ account for the maximum number of fitness in height and ‘age 20’ and ‘classes VII, VI and V’ account for the minimum Likewise, ‘class X’ and ‘age 17’ account for the maximum number of fitness in ‘height and weight’ and ‘class VII’ and ‘age 20’ account for the minimum. Taking all factors into consideration, the number of fit boys is maximum, that is 4, in ‘age 18’ and 2 each in ‘Class X’ and ‘class VIII’. In total, 7 boys are found fit for recruitment to the army.

TABLE—II

Physical fitness according to physionometric measurements.

| Measurement | Number of Kondh Males found fit | Percentage of fitness of Kondh Males |
|---|---|---|
| According to Height | 52 | 52% |
| According to Ht. & Wt. | 39 | 39% |
| According to Ht., Wt. & Chest | 7 | 7% |

Table—II is self-explanatory. It shows that 52% of Kondh boys are fit in 'height' and 39% of the boys are fit in both 'height and weight'. Only 7% of the boys are fulfilling all the criteria, that is, 'height, weight and chest' which is negligible. These seven boys are actually to be recruited to the army. But if 1000 boys are taken into consideration, the number of fit boys will be 70.

Nutrition Survey through diet study was also conducted during this work to assess the prevalence of malnutrition in the study area. The Kondhs have very irregular food habits and so it is very difficult to ascertain their nutritional status. They have no fixed timing in eating. They eat whenever food is available to them. So, staple food articles taken by them vary with different seasons and the diet of the Kondh is based on the availability of food stuff.

The staple foods taken by the Kondh are rice, maize, 'kuiri', ragi etc. varying from season to season depending on their availability. In summer season mango and jack-fruit being plentifully available are consumed as staple food for that season.

The intake of milk and milk products is totally absent. They keep goat to sacrifice in rituals and also for exchange of goods.

The pulses like 'Kulthi' ( horse gram ), 'Jhudang' (black gram) and 'Kalka' (one type of black gram) are mostly taken by the Kondhs but the intake is less in quantity and also very rare.

Usually the green leaves are the main curry of the Kondhs. They take more of it in the rainy season because of its abundant availability. They take the leaves like 'Khera' leaves, pumpkin leaves, sweet potato leaves etc.

The Kondhs take fruits like mango, jack-fruit, banana, papaya etc. Though they have planted banana and papaya in their kitchen-gardens they consume these casually. Most of the produce are sold in the market. They take different types of roots and tubers which they collect from the nearby jungle.

They eat vegetables like potato, beans, brinjal, sweet potato, ground potato etc. depending upon their availability during various seasons.

Intake of meat is occasional among the Kondhs. They take meat during the ceremonial occasions like birth, marriage, death and other festivities. In some ceremonies ritual sacrifice of animals is done and the meat of the sacrificed animal is equally shared by all the villagers as a sacred item. They usually take chicken, pork, mutton and fish. The quantity of meat taken per adult per day is 14.29gm. vide item (7) of Table—III.

Consumption of oil by the Kondhs is infrequent. They use oil extracted from mohua and mustard seeds.

They use condiments like turmeric, mustard, onion, garlic, dry as well as green chilly and salt. Salt is taken according to taste.

### TABLE — III

Food value (Nutrients composition) of different items taken daily per adult unit

| Sl. No. | Average daily intake of different food items per adult unit | | Quantity of food value consumed per day per adult unit | | | | |
|---|---|---|---|---|---|---|---|
| | Food stuff | Quantity in grams | Moisture (gm) 1 | Protein (gm) 2 | Fat (gm) 3 | Fibre (gm) 4 | Carbohydrate (gm) 5 |
| 1. | Rice | 557.82 | 68.05 | 47.41 | 3.35 | 3.35 | 431.75 |
| 2. | Dal (Field bean) | 15.55 | 1.45 | 3.87 | 0.12 | 0.22 | 9.34 |
| 3. | Green leaves | 25.94 | 19.45 | 1.74 | 0.44 | 0.23 | 3.48 |
| 4. | Mushroom | 9.85 | 7.40 | 0.46 | 0.08 | 0.04 | 0.39 |
| 5. | Jack-fruit | 14.28 | 7.44 | 0.27 | 0.01 | 0.16 | 2.70 |
| 6. | Potato | 3.28 | 2.45 | 0.05 | 0.003 | 0.01 | 0.75 |
| 7. | Meat (Mutton) | 14.29 | — | 2.65 | 1.90 | — | — |
| 8. | Onion (Raw) | 1.07 | 1.27 | 0.02 | 0.001 | 0.01 | 0.17 |
| 9. | Mustard Oil | 0.41 | 0.03 | 0.09 | 0.16 | 0.01 | 0.10 |
| 10. | Chilly | 1.57 | 1.91 | 0.05 | 0.01 | 0.64 | 0.10 |
| 11. | Turmeric | 0.04 | 0.01 | 0.002 | 0.002 | 0.001 | 0.24 |
| Total: | | 644.1 | 109.46 | 56.61 | 6.08 | 4.67 | 449.02 |

TABLE—III Food value ( Contd. )

| Sl. No. | Calcium | Phosphorus | Iron | Calories | Carotene | Thiamine. | Niacin | Riboflavin | Ascorbic acid |
|---|---|---|---|---|---|---|---|---|---|
| | gm | gm | mg | K.Cal | mg | mg | mg | mg | mg |
| | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 1. | 0.06 | 0.95 | 15.62 | 1946.79 | 22.31 | 1.17 | 13.39 | 0.89 | — |
| 2. | 0.01 | 0.07 | 0.31 | 53.91 | — | 0.08 | 0.28 | 0.03 | — |
| 3. | 0.11 | 0.02 | 1.82 | 24.90 | 1758.73 | 0.02 | 0.21 | 0.01 | 57.07 |
| 4. | 0.59 | 1.49 | 0.17 | 4.23 | — | 0.01 | 0.23 | 0.02 | 0.68 |
| 5. | 0.80 | 0.004 | 0.07 | 11.10 | 24.99 | 0.01 | 0.06 | 0.27 | 1.43 |
| 6. | 0.33 | 0.003 | 0.02 | 3.25 | 0.79 | 0.003 | 0.04 | 0.0003 | 0.56 |
| 7. | 1.29 | — | 0.36 | 27.72 | — | 0.03 | 0.97 | 0.04 | — |
| 8. | 0.002 | 0.001 | 0.01 | 0.49 | 0.22 | 0.001 | 0.004 | 0.0001 | 0.16 |
| 9. | 0.002 | 0.002 | 0.07 | 2.22 | 1.11 | — | 0.02 | 0.0002 | — |
| 10. | 0.0004 | 0.001 | 0.02 | 0.64 | 2.75 | 0.003 | 0.01 | 0.004 | 1.74 |
| 11. | — | 0.001 | 0.07 | 0.12 | 0.11 | — | 0.001 | — | — |
| Total: | 3.19 | 2.54 | 18.54 | 2075.37 | 1811.01 | 1.33 | 15.22 | 1.27 | 61.64 |

The nutritive value of different food items consumed per day per adult is represented in Table—III. The items consumed are rice, dal (field bean) green leaves, mushroom, jack-fruit, potato, meat, raw onion, mustard oil, chilly and turmeric. One adult consumes 557.82 gm. of rice, 15.55 gm. of dal (field bean), 25.94 gm. of green leaves, 9.85 gm. of mushroom, 14.28 gm. of jack-fruit, 3.28gm. of potato, 14.29gm. of meat, 1.07gm. of raw onion, 0.41gm. of mustard oil, 1.57gm. of chilly, 0.04gm. of turmeric. The quantity of most of the items is less than the recommended ICMR value. The total quantity of food items taken by one adult is 644.1gm. per day which consists of 109.46 gm. of moisture, 56.61gm. of protein which is only 1.61gm. more than the ICMR value, 6.08 gm. of fat which is 43.92gm. less than the ICMR value, 4.67gm. of fibre, 449.02gm. of carbohydrate which is 9.02gm. more than the

ICMR value, 3.19gm. of calcium which is 2.69 gm. more than the ICMR value, 2.54gm. of phosphorus which is 1.14gm. more than the ICMR value, 18.54mg. of iron which is1.46mg. less than the ICMR value, 2075.37kcal. of calories which is 424.63kcal. less than the ICMR value, 1811.01mg. of carotene, 1.33mg. of thiamine which is 0.67mg. less than the ICMR value, 15.22mg. of niacin, 1.27mg. of riboflavin which is 0.93mg. less than the ICMR value and 61.64mg. of ascorbic acid which is 11.64mg. more than the ICMR value. Liquor was found to have been consumed by five households out of ten surveyed households during a week. These five households having 14 adults, on an average, cosumed 3 litres of liquor daily which works out to 214ml. per adult per day.

### TABLE — IV

Monthly Calendar of Seasonal Activities

| Month | Male | | Female | |
|---|---|---|---|---|
| | Main | Subsidiary | Main | Subsidiary |
| Jan.—Feb. | Wage-earning | Collection of fire wood and minor forest products. | Wage-earning | Selling of fuel wood & household work. |
| Feb.-Mar. | —do— | Thatching of house | —do— | Collection of tamarind, & household Work |
| Mar.—Apr. | Ploughing in dry lands. | Collection of mohua flower. | Collection of mohua flower. | Collection of fire wood and house-hold work. |
| Apr.—May | Ploughing in dry lands. Collection of mango, jack-fruit. | Clearing of forest. | Collection of mohua flower, mongo, jack-fruit & other forest products | Collection of fire wood and house-hold work. |
| May—June | —do— | —do— | Collection of mango, jack-fruit. | —do— |

## TABLE — IV (Contd.)

| Month | Male | | Female | |
|---|---|---|---|---|
| | Main | Subsidiary | Main | Subsidiary |
| June—July | Transplantation of paddy | Collection of forest products | Transplantation of paddy | Collection of mushroom and household work. |
| July—August | —do— | —do— | —do— | —do— |
| Aug.—Sept. | Harvesting of "Kuiri" | Watching the kitchengarden | Helping in harvesting. | —do— |
| Sept.—Oct. | Harvesting of ragi,maize. | —do— | —do— | Household work and leaf plate making. |
| Oct.—Nov. | Harvesting of paddy and maize. | Watching the crops and kitchen garden. | —do— | —do— |
| Nov.—Dec. | Harvesting of Paddy and mustard. | —do— | —do— | Household work and taking care of kitchen garden. |
| Dec.—Jan. | Harvesting of turmeric, mung, biri etc. | Repairing of houses, watching the kitchen garden. | —do— | —do— |

Monthly calendar of main as well as subsidiary activities of Kondh males and females are given in Table—IV. Generally the males and females both work hard for the whole day, but the males do heavier work than the females. It reveals from the above Table that the Kondhs exert themselves more when the harvesting is done. The work load during the summer season is less than that of the other seasons due to absence of vigorous agricultural activities. Wage-earning is very common and is done by both the sexes.

**Conclusion :**

From the analysis of data made earlier, it is seen that the number of Kondh boys fit to be taken into the army is quite negligible compared to others. Many factors like their culture, living conditions, daily activities, food consumption, unscientific sanitary habits, low level of literacy etc. are responsible for making them unfit. Their ecology demands arduous work in order to exploit the natural resources and the environmental conditions compel them to undergo hardship to earn their living which is incongruous with their generally found low calorie intake. By correlating food intake with activities, it would be seen that the calorific value required for the activities of the Kondh is not available to him for which he has a weak body. Some of the boys though possess healthy bodies having good stature, height and weight are unable to expand their chest. Perhaps this is due to their lack of knowledge of physical exercise. So they need proper training and pre-military coaching on chest expansion. If this is done, 39% of the boys will be fit for recruitment to the army. An adult requires 2500* calories per day, but the average intake of an adult Kondh is 2075.37 calories as per data collected from the survey. The calorific value of the Kondh is less by 424.63kcal. than the recommended ICMR value of 2500kcal. This indicates that the Kondhs suffer from under or malnutrition so far as their standard diet is concerned.

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* The Konds of Orissa, P. 44 ——— Krishan Sharma.

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